

Exhibit 8

Filed Under Seal

56160
Metadata

Begin Bates	GOOG-AT-MDL-019097789
End Bates	GOOG-AT-MDL-019097818
Subject	
Email Subject	SUBMITTED - NO FURTHER CHANGES- P&C 149m2cHjPFX6CiyClu zLXm1vNXaaWF0nHqZnzjYCySU.docx
Master Date	6/9/2023
OS Saved Date/Time	6/9/2023 3:39 PM
Time Sent	
Time Received	
Custodian	
Email Datetime Received	
Company	Alphabet, Inc.
File Name	SUBMITTED - NO FURTHER CHANGES- P&C 149m2cHjPFX6CiyClu zLXm1vNXaaWF0nHqZnzjYCySU.docx
From	
To	
Extension	docx
Cc	
Bcc	
Author	no Author
Volume Name	PROD083-004
CSV Confidentiality	HIGHLY CONFIDENTIAL
OS Creation Date/Time	6/9/2023 3:46 PM
CSV Drive Collaborators	
CSV Drive Viewers	
Date Sent	
CSV Other Beg Bates	
CSV Last Author	
Date Received	
CSV Organization	
CSV Produced In	
CSV Search Values	
CSV Spec No	
CSV Gmail Thread Level 1	
CSV DOJ Edoc Properties	Edoc
CSV Redacted	
CSV References	
CSV Folder Label	
CSV Original Path	
CSV Linked AttachmentID	
CSV Linked ParentID	GOOG-AT-MDL-010633552;GOOG-AT-MDL-010633560;GOOG-AT-MDL-019516915

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**Case AT.40670 – Google - Adtech and Data-related practices****Response of 6 January 2023 to the EC's****RFI 10 dated 31 October 2022****SUBMITTED - NO FURTHER CHANGES**

This submission provides the response of Google LLC and its parent company Alphabet Inc. (together “**Google**”) to Questions 7, 19, 20, 21, 22, 36, 38, 42, 43, 46, 47, 53 (first sentence, concerning the narrative question), 56, 60.a, 60.b, 60.c, 60.e, 60.f, 64, 65, 66, 71, 72, 73, 76, 80, 83, 84, 89, 91, 94, 95, 97.b, 97.c, 97.d, 97.e and 98.c of the European Commission's (“**EC**”) information request of 31 October 2022.

Google's response contains highly confidential information on its business and technologies, the disclosure of which would cause serious damage to Google. Google therefore requests the Commission not to disclose any information provided in this response, without prior agreement from Google.

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Index of Annexes

Annex	Document title
22.1	Google's internal documents responsive to Question 22
22.2	Document production accompanying Report to respond to Question 22
22.2.1	DOJ CID 30120
22.2.2	DOJ CID 30471
22.2.3	CID 30120 Custodians and Search Terms
22.2.4	CID 30471 Custodians and Search Terms
22.2.5	Google Gmail Retention Policy and Records Policy
22.2.6	Production Log
22.2.7	Privilege Log
95.1	List of GAIA Council meetings

7. Please indicate whether Open Bidding is available to every SSP requesting access to it, or if Google decides whether to allow or not allow an SSP to integrate with Open Bidding.
- a. If the decision is made by Google, what are the criteria for that decision and what are their rationale?
- 7.1. Open Bidding is not available to every SSP which requests integration with Open Bidding.
- 7.2. Generally, Google assesses whether an SSP will provide significant incremental value to publishers before integrating them as an Open Bidder. Google assesses this based on two criteria:
- (a) Whether there are a large number of publishers requesting the SSP. This is based on feedback from Google's sales teams based on publishers transacting at scale with those SSPs. Google will seek qualitative feedback on why publishers are interested in the buyer.
- (b) Whether the SSP has some unique buyer demand. This may include the size of the exchange, if they are focussed on higher impact emerging environments (e.g. connected TV ads) and the SSP's geographic scope/scale.
- 7.3. The process of onboarding and technically integrating an SSP requires significant investment and resources. As such, if the SSP is not likely to be able to provide a significant incremental value to publishers, then Google will not integrate them with Open Bidding.
- 7.4. Google notes that if an SSP is rejected by Google, it is able to re-apply to integrate with Open Bidding following a 12-month waiting period.
- 7.5. Before integrating with an SSP, Google's Product and Trust & Safety team will assess whether the SSP has a significant history of ad fraud before allowing them to technically integrate.
- b. If Google has refused access to Open Bidding to some SSPs, please indicate the name of the company/ies concerned (i.e. the SSP whose access to Open Bidding has been refused), the time when access was requested and refused, and the reasons for such refusal.
- 7.6. Following an assessment by Google of each SSP against the Open Bidding criteria listed in paragraph 7.2 above, Google rejected the following SSPs for not meeting that criteria. Reasons included: (i) technical capabilities (for example they are not an SSP or do not have third-party demand), (ii) not many/any publishers asking for the applicant's demand, or (iii) they do not offer anything unique or a compelling revenue opportunity for publishers. In addition, as explained in paragraph 7.5, SSPs may be refused following a review by Google's Product and Trust & Safety team, and such SSPs are also included in Table 7.1. Google notes that it has provided the below information to the best of the knowledge of current Google employees. These rejections must be viewed in the context that significant investment and resourcing is required to integrate a partner.

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Table 7.1 - SSPs rejected from Open Bidding integration

Name of SSP	Time access requested and/or rejected
	Applied in or around January 2020 Rejected by September 2020 following a review by Google's Product and Trust & Safety team
	Rejected April 2020
	Rejected April 2020
	Rejected April 2020
	Rejected April 2020
	Rejected April 2020
	Rejected April 2020
	Rejected April 2020
	Applied June 2020 Rejected by September 2020 following a review by Google's Product and Trust & Safety team
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021

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	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected June 2021
	Rejected September 2021
	Rejected September 2021
	Rejected November 2021
	Applied October 2021 Rejected November 2021
	Applied October 2021 Rejected November 2021
	Applied August and September 2021 Rejected November 2021
	Applied August 2021 Rejected November 2021
	Applied September 2021 Rejected November 2021
	Applied September 2021 Rejected November 2021
	Applied September 2021 Rejected November 2021
	Applied October 2021 Rejected November 2021
	Applied October 2021 Rejected November 2021
	Applied November 2021

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	Rejected November 2021
	Applied November 2021 Rejected November 2021
	Applied December 2021 Rejected May 2022
	Applied November 2021 Rejected May 2022
	Applied November 2021 Rejected May 2022
	Applied November 2021 Rejected May 2022
	Applied November 2021
	Applied December 2021 Rejected May 2022
	Applied December 2021 Rejected May 2022
	Applied January 2022 Rejected May 2022
	Applied January 2022 Rejected May 2022
	Applied January 2022 Rejected May 2022
	Applied February 2022 Rejected May 2022
	Applied February 2022 Rejected May 2022
	Rejected May 2022
	Applied January 2022 Rejected May 2022
	Applied April 2022 Rejected May 2022

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	Applied April 2022 Rejected May 2022
	Applied March 2022 Rejected May 2022
	Applied March 2022 Rejected May 2022
	Applied March 2022 Rejected May 2022
	Applied April 2022 Rejected May 2022
	Applied April 2022 Rejected May 2022
	Applied April and June 2022 Rejected August 2022
	Applied May 2022 Rejected August 2022
	Applied May 2022 Rejected August 2022
	Applied May 2022 Rejected August 2022
	Applied May 2022 Rejected August 2022
	Applied June 2022 Rejected August 2022
	Applied June 2022 Rejected August 2022
	Applied June 2022 Rejected August 2022
	Applied July 2022 Rejected August 2022
	Applied July 2022 Rejected August 2022

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	Applied July 2022 Rejected August 2022
	Applied July 2022 Rejected August 2022
	Applied August 2022 Rejected November 2022
	Applied September 2022 Rejected November 2022
	Applied August 2022 Rejected November 2022
	Applied September 2022 Rejected November 2022
	Applied October 2022 Rejected November 2022
	Applied October 2022 Rejected November 2022

19. Please indicate whether Google Ads has access to data on ad viewability and Click-Through-Rate related to ad impressions that are not purchased by Google Ads or DV360.¹ If so, please describe these data elements.

19.1. Google Ads does not access data on ad viewability and Click-Through-Rate ("CTR") related to ad impressions that are not purchased by Google Ads or DV360.

20. Please indicate whether DV360 has access to data on ad viewability and Click-Through-Rate related to impressions to ad impressions that are not purchased by DV360 or Google Ads.² If so, please describe these data elements.

20.1. DV360 does not access data on ad viewability and CTR related to ad impressions that are not purchased by DV360 or Google Ads.

21. Please indicate whether AdX has access to data on ad viewability and Click-

¹ The question applies irrespective of the way Google Ads receives or accesses this data and irrespective of the frequency of access. For instance, the question applies if Google Ads receives this data from another Google software, if Google Ads has the permission to access this data in a database, or if this data is transmitted to Google Ads on an ad-hoc basis.

² The question applies irrespective of the way DV360 receives or accesses this data and irrespective of the frequency of access. For instance, the question applies if DV360 receives this data from another Google software, if DV360 has the permission to access this data in a database, or if this data is transmitted to DV360 on an ad-hoc basis.

Through-Rate related to impressions to ad impressions that are not sold by AdX.³ If so, please describe these data elements

- 21.1. Google Ad Manager (“**Ad Manager**”) provides services to publishers that include ad measurement data from both its role as an ad server (previously known as DFP) and ad exchange (previously AdX).
- 21.2. Both the ad exchange and ad serving functionalities of Ad Manager have access on an ongoing basis to data on ad viewability and CTR related to impressions that are served by Ad Manager, when available to be collected. This ongoing access is used to provide, for example, reporting to publishers using Ad Manager that includes ad viewability data and CTR for impressions served by all functions offered by Ad Manager.
- 21.3. However, for impressions served by Ad Manager but sold via third-party SSPs such as header bidders, Ad Manager does not have access to many of the ad measurement metrics for those ads (this may include rendered impressions and CTR data).
- 22. **Please provide all reports of analysis performed or commissioned by Google analysing potential changes in (i) Google’s win rate of impressions, and (ii) the price paid for the winning bid, following the introduction of the Unified Pricing Rules.**
- 22.1. Google provides documents responsive to this question in **Annex 22.1**. The report in **Annex 22.2** provides detail on how Google prepared this production.
- 36. **In your reply to Question 31 of RFI 7 of 12 July 2021, you state that Google Ads started bidding on third-party SSPs in June 2015. The Commission has information indicating that AWBid was publicly announced only around May 2016.**

Please explain:

- a. **when the decision to develop AWBid was taken, identifying and providing dates for key meetings and decision points;**
- 36.1. An overview of the initial AWBid proposal was prepared in around December 2009. Google first began negotiating with third-party exchanges to give Google Ads access to the exchanges’ inventory in early 2011, but this initial AWBid effort stalled between June and December 2011.
- 36.2. After this initial effort, AWBid was resurrected with a focus on remarketing. The AWBid closed beta launch occurred in May 2013. The decision to launch AWBid was decided through a standard launch review process of display ads leads in June 2015 and prior to that by the product VPs in Apps, Video & Display (“**AVID**”) in December

³ The question applies irrespective of the way AdX receives or accesses this data and irrespective of the frequency of access. For instance, the question applies if AdX receives this data from another Google software (or from the ad serving functionality of Ad Manager), if AdX has the permission to access this data in a database, or if this data is transmitted to AdX on an ad-hoc basis.

2014. AWBId was fully launched for all Google Ads advertisers running remarketing campaigns in June 2015, following a pilot (called AWBId Cross-exchange Pilot for AdWords Remarketing) that was launched in January 2015. The launch timeline until May 2016 (when Google announced the introduction of AWBId), including key decisions, was as follows:

- (a) October 2012: Work on AWBId starts.
- (b) May 2013: Beta launches begin on AdMeld⁴. Two or three exchanges were involved early in the beta launch. In Q3 of 2013, three exchanges had been launched (PulsePoint, Casale and AdMeld).
- (c) February 2014: 1% all-remarketing experiment begins.
- (d) October 2014: 10% all-remarketing experiment begins and production of analysis of AWBId value for review by VPs.
- (e) January 2015: AWBId product approved for full launch by VPs.
- (f) March 2015: First attempt at full launch - attempt to launch OpenX and Rubicon exchanges.
- (g) June 2015: Rubicon actually launches.
- (h) May 2016: Google announced the introduction of AWBId through a blog post dated 24 May 2016⁵ and at the 2016 Google Performance Summit, an annual launch event for AdWords (as Google Ads was then known).⁶

b. when the testing of the product started;

- 36.3. As explained in the timeline above, the closed beta launch of AWBId occurred in May 2013.

c. when the product was finally launched anywhere in the world and in each EEA country, if these differ;

- 36.4. AWBId was launched globally for all Google Ads advertisers running remarketing campaigns in June 2015.

d. when the decisions to extend AWBId to other targeting purposes and campaign types besides remarketing were taken, identifying and providing dates for key meetings and decision points;

⁴ AdMeld has been owned by Google since 2011 so this was not technically a third-party SSP in May 2013.

⁵ See Google blog post, "Ads and analytics innovations for a mobile-first world", available at: <https://www.blog.google/products/ads/ads-and-analytics-innovations-for-a-mobile-first-world/>.

⁶ See "Google Performance Summit 2016: Full List of Highlights and Takeaways", available at: <https://www.builtinchicago.org/blog/google-performance-summit-2016-full-list-highlights-and-takeaways>, and "Google Ads & Analytics Innovations Keynote", available at: <https://www.youtube.com/watch?v=JW1LS94wLJw>.

- 36.5. In 2018 (and 2019), AWBid was expanded to other targeting purposes and campaign types besides remarketing to include, for example, interest-based targeting (see the response to Question 36(f) below). The initial proposal to expand into other targeting types was made in August 2016. Design and experimentation work started in Q4 of 2016. These targeting types were reviewed for launch in August 2018. Final approvals were given in Q3 of 2018 and the final launch took place in October 2018. The decision to launch these targeting types was decided through a standard launch review process of display ads leads.

e. when the testing of these other types/campaigns started;

- 36.6. As discussed in the response to Question 36(d) above, design work started in Q4 of 2016. Experiments/testing took place in 2017.

f. when the other types/campaigns were launched anywhere in the world and in each EEA country, if these differ.

- 36.7. After Google successfully built and operated the technical infrastructure required for Google Ads to bid on third-party SSPs for remarketing, Google Ads then began bidding on third-party SSPs for other targeting types in 2018 (or shortly after) and in 2020 for keyword targeting. The launch dates for the other types/campaigns globally (including in the EEA) were as follows:

(a) 16 October 2018: Interest Category Marketing (otherwise known as In-Market), Topic, Affinity/User Interest.

(b) 14 May 2019: Custom In-Market.

(c) 21 February 2020: Keyword targeting.

(d) May 2020: Custom Audience.

- 36.8. Over the course of 2019 and 2020, AWBid also expanded to allow advertisers to bid on cookieless inventory on third-party exchanges (cookieless traffic had not been a focus while AWBid was predominantly serving remarketing ad demand). For Safari traffic, this launched on 15 August 2019. Cookieless inventory was launched on Safari traffic initially only for a limited number of exchanges (Casale, OpenX, Pubmatic and Rubicon). On 21 February 2020, AWBid cookieless inventory was expanded to further exchanges on Safari traffic. For non-Safari traffic, this launched on 24 April 2020.

- 38. Please indicate whether Google Ads bids, or has ever bid, on third-party SSPs, for each targeting purpose and campaign type identified in Question 37 above. If yes, please indicate the dates it was made available for bidding on third-party SSPs for ads anywhere in the world and in each EEA country, if these differ. Please also specify whether, within any of these targeting purposes or campaign types, there were ever any types of impressions or inventory that were not eligible for bidding on third-party SSPs.**

- 38.1. The following are the targeting types that Google Ads bids, or has bid, on third-party SSPs (along with the dates each were made available for bidding on third-party SSPs globally, including in the EEA):

- (a) 1 June 2015: Remarketing.
 - (b) September 2016: Similar Audience (part of remarketing).
 - (c) 16 October 2018: In-market, Topic and Affinity.
 - (d) 14 May 2019: Custom In-Market.
 - (e) 21 February 2020: Content keywords.
 - (f) May 2020: Custom Audience.
- 38.2. For these targeting types, Google Ads bids, or has bid, on third-party SSPs for the following campaign types: Display campaigns, Smart Display campaigns, Smart campaigns and Smart Shopping campaigns.
- 38.3. Google Ads has not bid on third-party SSPs for other targeting and campaign types, further details of which will be given in the response to Question 37 of RFI 10.
42. **Please describe in detail the “historical data on win/loss information for similar queries that Google has bid on in the past” referred to in paragraph 36.5 of your reply to RFI 7 of 12 July 2021. Please specify whether the identity of the SSP/exchange submitting the request is known in respect of this data, and whether this information is provided as an input to the machine learning model(s).**
- 42.1. Please refer to the documents referred to in paragraph 36.9 of the RFI 7 Response for further detail on what this is referring to. In particular, as described in GOOG-EC_AdTDa_RFI7-00157556, the model predicts the expected revenue of a query and has two parts:
- (a) The win-rate model, which predicts if the query is expected to have a positive advertiser value (i.e. an impression is rendered for a winning ad). This is trained on all queries including those with zero advertiser value - i.e. all winning and losing queries.
 - (b) The revenue model, which predicts the expected revenue from a query, conditioned on the advertiser value being positive (i.e. having a winner ad). This is trained only on queries with positive advertiser value - i.e. only winning queries.
- 42.2. As described in GOOG-EC_AdTDa_RFI7-00157556, each day, the model generates the inputs for both models from [REDACTED]
- 42.3. The identity of the SSP/exchange in the historical data (i.e. the identity of the web property that submitted the request) is one of the features used in the machine learning model. The methodology and modelling is agnostic to the exchange/SSP: the model learns the pattern that exists in the historical data of each SSP separately but does not know whether an exchange/SSP is a Google service or not.
43. **Please describe in detail the placing of bid requests into “buckets from low value**

to high value" referred to in paragraph 36.6 of your reply to RFI 7 of 12 July 2021.

43.1.

43.2.

- 46. Please explain whether the introduction of AWBId in 2015/2016, or its expansion in 2018, was communicated to advertisers, agencies and publishers, providing dates and copies of any such announcements, either (i) proactively at Google's initiative or (ii) in reply to questions from stakeholders or other third parties.**

Launch of AWBId in 2015/2016

- 46.1. Google announced the introduction of AWBId through a blog post dated 24 May 2016⁷ and at the 2016 Google Performance Summit, an annual launch event for AdWords (as Google Ads was then known).⁸ Google announced that it was extending the reach of Google Display Network remarketing campaigns by giving advertisers access to cross-exchange inventory.⁹ As explained above, AWBId was only available for remarketing campaigns at this time.
- 46.2. As explained in the response to Question 34 of RFI 7, Google Ads also informs advertisers and third-party SSPs about cross-exchange bidding for Display remarketing campaigns on a dedicated page of its Help Centre.¹⁰ The slide deck used for reactive communications with customers on Google Ads bidding on third-party SSPs for remarketing was provided at Annex 34.1 to Google's response to RFI 7.

Expansion of AWBId in 2018

- 46.3. Based on the knowledge of current Google employees, there was no announcement in relation to the expansion of AWBId in 2018.
- 47. Please state whether any restrictions were placed on third-party SSPs or exchanges integrating with Google Ads, contractually or otherwise, in relation**

⁷ See Google blog post, "Ads and analytics innovations for a mobile-first world", available at: <https://www.blog.google/products/ads/ads-and-analytics-innovations-for-a-mobile-first-world/>.

⁸ See "Google Performance Summit 2016: Full List of Highlights and Takeaways", available at: <https://www.builtinchicago.org/blog/google-performance-summit-2016-full-list-highlights-and-takeaways>, and "Google Ads & Analytics Innovations Keynote", available at: <https://www.youtube.com/watch?v=JWILS94wLJw>.

⁹ See Google blog post, "Ads and analytics innovations for a mobile-first world", available at: <https://www.blog.google/products/ads/ads-and-analytics-innovations-for-a-mobile-first-world/>.

¹⁰ See Google Help Centre, "About cross-exchange for Display remarketing campaigns", available at: <https://support.google.com/google-ads/answer/7008174>.

to their ability to announce or discuss with their clients or other third parties the integration of Google Ads demand with their services.

47.1. Google's contract with third-party SSPs or exchanges integrating with Google Ads generally contains a confidentiality provision that provides that the existence and terms of the contract are confidential information, which the recipient may use only to exercise its rights and fulfil its obligations under the contract. However, the relevant third-party SSP may disclose to its publishers certain terms of the contract. This is because some of the information belongs to advertisers so SSPs are restricted from sharing confidential information beyond what is necessary to disclose to their publishers.

53. Please explain whether DV360 has been submitting two (or more) bids on AdX and during which time period.

53.1. DV360 has been submitting multiple bids to the AdX auction since 2012, to increase the ability of DV360 advertisers to win an impression.

56. Please detail out the different iterations of the Bernanke programme.^{11 12} In this respect, indicate:

a. why each of these have been designed and changed by Google;

56.1. Project Bernanke was launched in November 2013 and is currently used to calculate Google Ads' bids for Ad Manager and AdMob inventory. The precise mechanism has evolved over the years. Google considers that the most significant iterations of Bernanke since its launch are the following:

(a) **Global Bernanke (also known as "Project Bell"):** Under the initial version of Bernanke, Google Ads targeted an average take rate on a per publisher basis. Under Global Bernanke, launched in 2015, Google Ads targeted an average take rate across all publishers, but allowed the target take rate to vary to an extent for individual publishers. This change was intended to increase the conversion volume for advertisers.

(b) **Launch of Bernanke AdMob:** Bernanke was originally only launched for AdX inventory. In 2018, Google also launched Bernanke for AdMob inventory.

(c) **Move to a first price auction:** Google updated the Bernanke algorithms in 2019 to be compatible with the Unified First-Price Auction (as discussed in more detail in the response to Question 60 below). The updated version of Bernanke is sometimes referred to within Google as "Alchemist".

¹¹ Please explain whether the (buy-side) dynamic revenue share launched by the Google Gtrade team in January 2013 was part of the Bernanke programme. Even if you consider that it was not, please still include, where relevant, this (buy-side) dynamic revenue share in the replies to the questions of this questionnaire.

¹² Your reply should inter alia cover at the minimum (buy-side) dynamic revenue share, Bernanke, Global Bernanke and Bell.

56.2. Dynamic RevShare for Google Ads ("**Google Ads DRS**")¹³ was a predecessor of Project Bernanke. Google Ads DRS was launched in January 2013 to allow Google Ads to dynamically adjust the take rate it targeted, depending on the competitiveness of the AdX auction. Prior to Google Ads DRS, Google Ads would always reduce the value of the two bids it submitted to AdX by 14%. Under Google Ads DRS, Google could target a lower take rate (<14%) on the high bid it submitted to the AdX auction, such that the high bid was at a higher CPM level. This increased the chances of Google Ads' high bid beating competing bids and meeting floor prices in the AdX auction. Like Bernanke, Google Ads DRS relied on the same kinds of bid data available to all bidders in the AdX auction, allowing non-Google bidders to do the same type of bidding optimisation if they chose to do so.

56.3. Google Ads DRS was later replaced by Bernanke in November 2013, to increase the Google Ads high bid and decrease the Google Ads low bid submitted to the AdX auction while targeting the same aggregate take rate as before. Bernanke continued to target a similar aggregate take rate as the pre-Bernanke bidding systems.

b. the period during which Google was applying the Bernanke programme and each of its iterations;

56.4. Please refer to the response to Question 56(a) above.

c. the role of the various business units of Google in applying/running each iteration of the Bernanke programme (demand/supply-side teams interactions on Bernanke's design as well as application);

56.5. As Bernanke and DRS are bidding optimisation mechanisms used by Google Ads, the Google Ads team is responsible for running Bernanke (including in relation to the main iterations of Project Bernanke referred to in response to Questions 56(a)-(b) above) and was responsible for running Google Ads DRS.

d. which part(s) of Google's business/units made the decision to develop each iteration of the Bernanke programme.

56.6. The decision to develop Project Bernanke and Google Ads DRS was taken through a standard launch review process of display ads leads and by the engineering and product VPs in Display Ads, Video Ads, Apps Ads and Analytics ("**DVAA**") (which Google has since rebranded as AVID). Current employees have advised that the main iterations of Bernanke described in response to Questions 56(a)-(b) above would have all been decided through a standard launch review process of display ads leads and in some circumstances they would have been escalated to the engineering and product VPs in AVID.

60. Please explain how the Bernanke (or its iterations) were adapted to the

¹³ There was also an AdX feature called Dynamic Revenue Share, distinct from Dynamic Revshare for Google Ads, which was discontinued in September 2019 (see the response to Question 5 of the EC's RFI 10 submitted to the EC on 12 December 2022).

introduction of the Unified First Price auction.

a. Please detail out why and which part(s) of Google's business/units were involved (even if they were only consulted) on this adaptation.

- 60.1. As noted in the response to Question 56(d) above, the updates of Bernanke's algorithm for compatibility with the Unified First-Price Auction would have been decided by the standard launch review process of display ads leads and may also have been escalated to the engineering and product VPs in AVID.

b. Please explain the functioning of the Project Alchemist/First Price Bernanke and its differences to the functioning of Bernanke in the second price auctions.

- 60.2. As noted in the response to Question 56(a) above, Google updated the Bernanke algorithms in 2019 to be compatible with the Unified First-Price Auction. The update was designed to enable Google Ads to bid into the Unified First-Price Auction, while continuing to target a similar aggregate take rate.
- 60.3. As explained in the response to Question 49 of the EC's RFI 10 submitted to the EC on 16 December 2022, with the change to the Unified First-Price Auction, Google Ads discontinued the submission of the second (low bid) since Google Ads would be charged the amount of its high bid in any event if it won the Unified First-Price Auction. Google Ads' objective buying into the Unified First-Price Auction is to maximise expected advertiser surplus (subject to achieving an aggregate rate of return) (as previously explained in the response to Question 48 of RFI 7). This would maximise the expected advertiser surplus, defined as the difference between the value of the ad to the advertiser and the bid into Ad Manager if Google Ads won the auction (which in a first price auction is also the value paid by Google Ads).
- 60.4. Bernanke decides the "optimal bid" by maximising advertiser surplus subject to a target take rate. As explained in the response to Question 67 of the EC's RFI 10 submitted to the EC on 16 December 2022, with the change to the Unified First-Price Auction, Bernanke started modelling, via machine learning, expected bids in prospective auctions based on bid data from past auctions. That is, it uses the distribution of the predicted highest other bid ("pHOB") in the unified auction to do so (which is not something it needed to do in a second-price auction for the reasons explained in the response to Question 13 of the EC's RFI 10 submitted to the EC on 12 December 2022). This is the minimum-bid-to-win data which is available to all bidders that are intermediated via Google's ad exchange, third-party SSPs that participate in Open Bidding and header bidders integrated with HBYG (with whom Google has a contractual relationship) (as described in the responses to Questions 13 to 17 of the EC's RFI 10 submitted to the EC on 12 December 2022).
- 60.5. Bernanke operates in the Unified First-Price Auction by continuing to target a similar aggregate take rate as it did prior to the introduction of the Unified First-Price Auction.

c. Please explain whether Google applied Bernanke to all Google Ads advertisers or just selected proportion/group of advertisers (your reply

should also distinguish between mobile web, mobile app and non-mobile where relevant) and since when. Please distinguish per the Bernanke programme's various iterations as relevant. Please explain the rationale for those choices.

60.6. Bernanke is applied by Google Ads to all Google Ads bids/advertisers in the Ad Manager auction. Since the launch of Bernanke AdMob in 2018, Bernanke is also applied to bids to the AdMob auction.

e. Please indicate whether advertisers are/were aware of Google applying this optimization mechanism to their bids. Did they have any control over how Google applied it and to which bids?

60.7. Google has not generally discussed Project Bernanke with third-party advertisers. Google Ads does not typically offer advertisers control of bidding optimization mechanisms such as Bernanke.

60.8. As explained above, Bernanke is intended to maximise advertiser value and increase conversions for Google Ads advertisers. The primary effect of Bernanke is therefore to allow Google Ads to serve Google's advertisers better, increasing the likelihood that their ads will win the auction.

f. Please indicate whether the publishers are/were informed about the existence of Bernanke. Did they have any control over how Google applied it and to which bids?

60.9. Google has not generally discussed Project Bernanke with third-party publishers. As Bernanke is a bidding optimisation mechanism internal to Google Ads and Google Ads is an advertiser-facing service with no direct relationship with publishers, publishers do not control its application.

60.10. To the extent that Bernanke increased the number of successful transactions and made the Ad Manager (and AdMob) auction mechanic more efficient, this is also in the interests of publishers as it encourages advertisers to participate in those auctions.

64. Please state the percentage of margins applied to (i) bids placed by Google Ads on AdX and (ii) bids placed on third-party SSPs or exchanges, for the entire period since Google Ads began bidding on third-party SSPs/exchanges. If the margin is variable, please provide yearly averages. If the margin is fixed, please provide any variations in the amount of the margin chosen over time and based on the targeting purpose and/ campaign type.

64.1. As previously explained, Google does not separately record the amount retained by Google Ads when buying on Google's ad exchange in a readily available manner. In particular, for impressions served through Ad Manager's ad exchange, Google cannot distinguish between Google Ads' buy-side take and Ad Manager's ad exchange's sell-side take in its finance systems; it can only observe the amount the advertiser paid Google Ads and the amount that was paid out to the publisher using Ad Manager.

- 64.2. Google has in the past attempted to estimate this amount at a global level for 2019. In particular, Google estimated Google Ads' worldwide buy-side net revenue in 2019. Google was only able to estimate Google Ads' net revenues for 2019 on a global basis because Google had conducted an extensive data validation exercise over the course of several months with respect to Google Ads' worldwide net revenues for 2019.¹⁴ It estimated that Google Ads retained approximately [REDACTED]
- 64.3. No analogous exercise has been conducted for previous or later years or for narrower geographies.
- 64.4. For impressions served through third-party exchanges, the average percentage of advertiser spend retained by Google Ads is given in the table below, for each year between 2017 and 2022 (until September).

Table 64.1 - Average % of advertiser spend retained by Google Ads

Year	Average percentage of advertiser spend retained by Google Ads
2017	[REDACTED]
2018	[REDACTED]
2019	[REDACTED]
2020	[REDACTED]
2021	[REDACTED]
2022	[REDACTED]

65. Please explain whether DV360 has been taking (during 2012-2022) the same percentage margin when it has bid into AdX as when it has bid into third party SSPs. If not, explain why and provide a list of DV360 margins per SSP.
- 65.1. As explained in the response to Question 48 of the EC's RFI 10 submitted to the EC on 12 December 2022, DV360 does not deduct its fees from the bid it submits. Rather, DV360 customers pay for the service through a monthly service fee including a percentage of the customer's "exchange spend". This percentage does not differ as between spend on Ad Manager and spend on third-party SSPs.
66. Please provide a general description of how the percentage margins taken by Google Ads, DV360 and AdX evolved over time (since 2008 or since acquisition). In particular, in your reply to Question 75 of RFI 2 of 27 August 2020, you indicate that the average margin for Google Ads was [REDACTED] in 2019¹⁵ while in the reference you provide (ft. 23) you also provide a link to your website where you indicate a

¹⁴ See "How our display buying platforms share revenue with publishers", available at: <https://blog.google/products/admanager/display-buying-share-revenue-publishers/>.

¹⁵ Average for the 12 months up to October 2019.

margin of [REDACTED] for 2019¹⁶. Please explain the difference.

Google Ads

- 66.1. As explained in the response to Question 35 of RFI 7, when Google Ads bids on an SSP, Google retains a varying take rate that is calculated as the difference between the payments received from advertisers and the amount it paid to the SSP. Please refer to the response to Question 63 of the EC's RFI 10 submitted to the EC on 16 December 2022 for further information about changes in the take rate targeted by Google Ads.
- 66.2. The calculation of the figure in the RFI response [REDACTED] differs from that for the figure on the website [REDACTED] in two ways. First, it was calculated over a different time period (the 12 months to October 2019 as opposed to the average margin for 2019). Second, it also includes AWBid, rather than being limited only to bidding on Ad Manager.

DV360

- 66.3. A description of the fees charged by DV360 is provided in the response to Question 48 of the EC's RFI 10 submitted to the EC on 12 December 2022. As described in that response, these fees include a fee set as a percentage of the customer's "exchange spend". As explained in the response to Question 65 above, this percentage does not vary by exchange. While this was previously a tiered percentage (varying by a customer's spend), a single rate is currently in the process of being implemented for all customers.

Ad Manager's ad exchange

- 66.4. In Ad Manager's ad exchange, fees are calculated as a revenue share based on the closing auction price. The revenue share is contractually agreed and may vary according to the type of transaction (Open Auction, Private Auction, Preferred Deal and Programmatic Guaranteed). Google's standard revenue share rate for Open Auction and Private Auction transactions is 20%, and Google's standard rate for Preferred Deal and Programmatic Guaranteed is 10%. To the best of the knowledge of current Google employees, prior to the introduction of new transaction types with different rates (Private Auction, Preferred Deal and Programmatic Guaranteed), Google's standard contractual rate was 20%.
- 66.5. For publishers that utilise Google's Open Bidding (formerly known as Exchange Bidding) tool, when an auction is won by an Open Bidder, Google's standard charges are (and have been historically) a revenue share rate of 5-10% (instead of the ad exchange revenue share).

71. Please describe the following aspects of (i) Poirot and (ii) Marple:

a. Period of application (from its launch(es) until when it was disapplied). Please distinguish by jurisdiction US and EEA as relevant, if the timeline differs.

¹⁶ See "How our display buying platforms share revenue with publishers", available at: <https://blog.google/products/admanager/display-buying-share-revenue-publishers/>.

Project Poirot

- 71.1. Project Poirot launched on 19 July 2017 globally (including in the US and EEA) and is still active today.

Project Marple

- 71.2. Project Marple launched on 12 September 2018 (including in the US and EEA) and is still active today.

b. If applicable, reasons for the decision to disapply Poirot or Marple.

Project Poirot

- 71.3. Project Poirot still applies today.

Project Marple

- 71.4. Project Marple still applies today.

c. Relation of the Project to pHOB.

Project Poirot and Project Marple

- 71.5. As explained in the response to Questions 13 to 15 of the EC's RFI 10 submitted to the EC on 12 December 2022, Ad Manager has provided minimum-bid-to-win information to bidders (including third-party DSPs) that are intermediated via Google's ad exchange and third-party SSPs that participate in Open Bidding since its introduction in September 2019. Third-party exchanges typically do not share minimum-bid-to-win information or any other data on the highest other bid. When bidding on third-party exchanges, Google Ads therefore runs exploratory experiments to gather data on the pHOB, which is used in: (i) the Project Poirot determination of the optimal bid (being the bid that maximises the expected advertiser surplus); and (ii) the Project Marple determination of the optimal bid (being the bid that maximises expected advertiser surplus subject to Google Ads achieving the target aggregate take rate).

d. Relation of the Project to HDML.

71.6.

71.7.

e. Involvement of each of the buy-side and supply-side teams in the design and modifications/refinements to the Projects.

Project Poirot

- 71.8. Given Project Poirot is a buy-side optimisation, the Google buy-side team developed Poirot and were involved in the design and modifications/refinements to Project Poirot. To the best of the knowledge of current Google employees, the Google sell-side team was not involved in the development, design or modifications/refinements to Project Poirot.

Project Marple

- 71.9. Given Project Marple is a buy-side optimisation, the Google buy-side team developed Project Marple and were involved in the design and modifications/refinements to Project Marple. To the best of the knowledge of current Google employees, the Google sell-side team was not involved in the development, design or modifications/refinements to Project Marple.

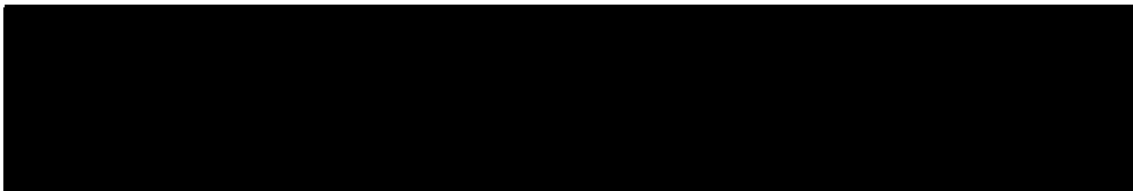
- 72. Please detail out the mechanism how Google identified SSPs to which it would apply (i) Poirot and (ii) Marple.**

Project Poirot

- 72.1. As explained in the response to Question 69 of the EC's RFI 10 submitted to the EC on 16 December 2022, Poirot applied equally to all SSPs, including Ad Manager. However, the Poirot optimisation would not result in the bid changing for exchanges running only clean second-price auctions.

Project Marple

- 72.2.



- 73. Please indicate whether (i) Poirot has ever applied to DV360 bids on SSPs/ad exchanges running a 2nd price auction, and (ii) Marple has ever applied to Google Ads bids on SSPs/ad exchanges running a 2nd price auction. If so, please provide for each Project the list of such SSPs, the period during which Poirot/Marple has applied to DV360's/Google Ads' bids on each of them, and indicate the reason for the application.**

Project Poirot

- 73.1. As explained in the response to Question 69 of the EC's RFI 10 submitted to the EC on 16 December 2022 and in the response to Question 72 above, Project Poirot applied to all exchanges that DV360 bid on, including those running a second-price auction. As explained in the response to Question 69, this is because some exchanges might

have been running both first-price and second-price auctions (although not transparently). Google did not impose any constraints on the Poirot bidding algorithm based on Google's understanding of whether the auction was second-price or non-second-price. Rather, as explained in the response to Question 69, Poirot determines the optimal bid, which is the one that maximises expected advertiser surplus. Poirot therefore applied to all exchanges that DV360 bid on but the Poirot optimisation would not result in the bid changing for exchanges running only clean second-price auctions.

Project Marple

73.2.

- 76. Please explain whether (i) Poirot and (ii) Marple continued to apply (in original or modified form) after AdX transitioned to first price auction. If the Projects were modified in that context, please explain why and how for each.**

Project Poirot

- 76.1. Yes, Project Poirot continued to apply once Ad Manager's ad exchange transitioned to a first-price auction. Poirot continued to maximise expected advertiser surplus. The key difference resulted from the fact that Ad Manager started to provide minimum-bid-to-win information to real-time bidders that directly bid into the Unified First-Price Auction (as explained in more detail in the response to Question 13 of the EC's RFI 10 submitted to the EC on 12 December 2022). This meant that where DV360 received minimum-bid-to-win information from Ad Manager, Google could use the minimum-bid-to-win information to estimate the highest other bid rather than using the highest other bid inferred from exploration experiments. As explained in the response to Question 71 above, third-party exchanges typically do not share minimum-bid-to-win information or any other data on the highest other bid, so Google continues to infer the pHOB from running exploration experiments and applying learnings from patterns observed from the minimum-bid-to-win information provided on Ad Manager (to adapt bidding on those third-party exchanges).

Project Marple

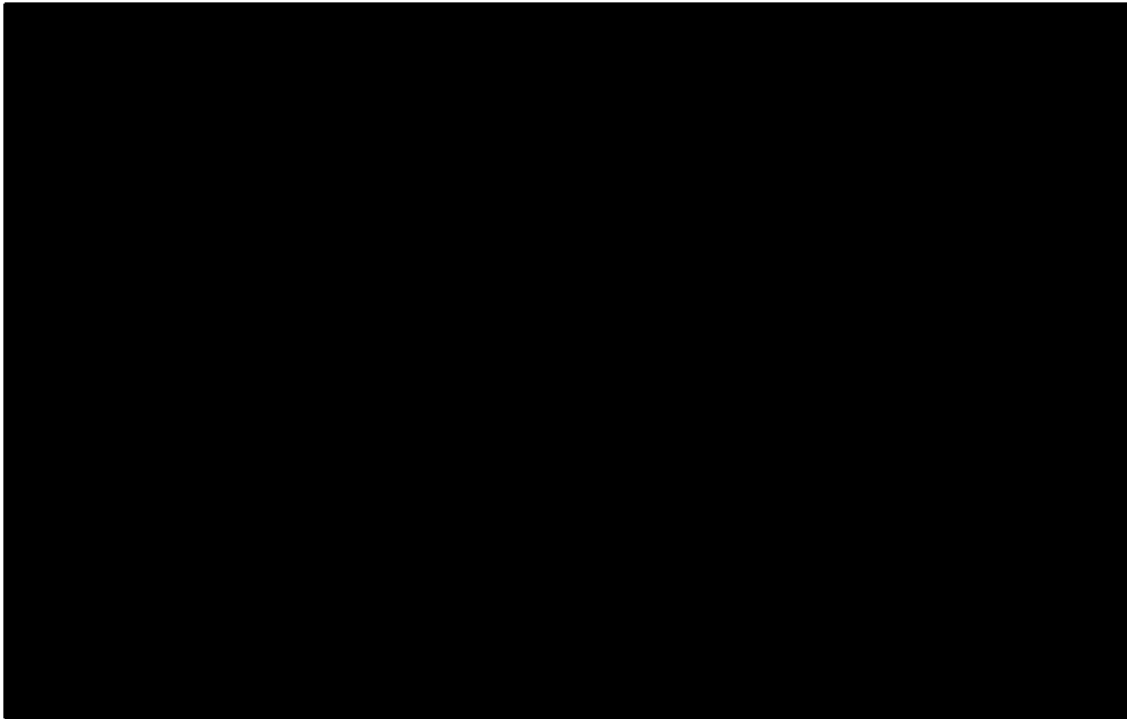
76.2.

- 80. Please identify all Google products (not limited to those active in the ad tech stack) that maintain "user profiles" for purposes of advertising as referred to in paragraphs 12.9 and 12.10 of your reply to RFI 7 of 12 July 2021. In your reply, please:**
- a. Specify whether any user profiles are unique to the respective product or common to more than one distinct Google product;**

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80.1. Google Ads and DV360 maintain “user profiles” for the purposes of advertising. These user profiles are common across Google Ads and DV360.

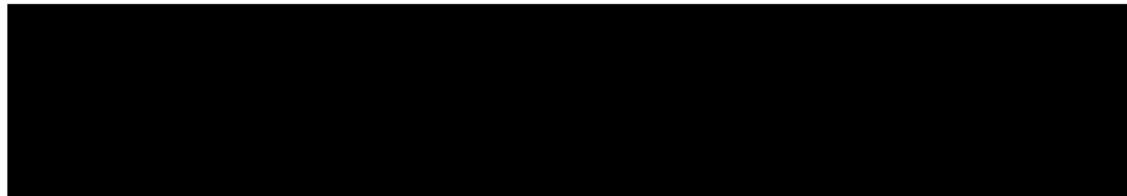
80.2.



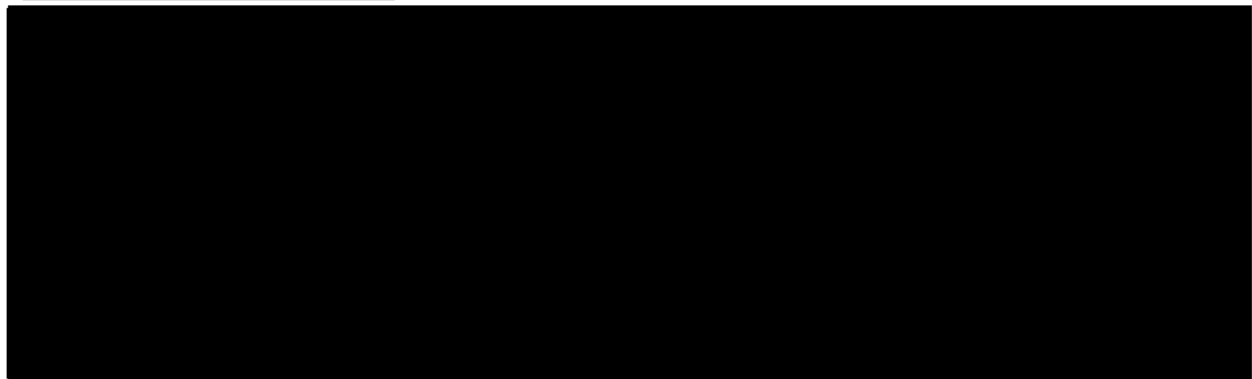
b. Identify all Google products that either receive or use any common user profiles, or between which data contained in one user profile may be transferred or used to enrich another;

80.3. Please see the response above. Google Ads and DV360 use common user profiles for the purposes of advertising.

80.4.



80.5.



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[REDACTED]²⁰

- c. Identify internal names for major databases or other projects concerning the maintenance of user profiles for purposes of providing personalised advertising, with a brief description of each;

80.6.

[REDACTED]

- d. Describe the means by which the user profile (or information stored therein) is associated to a user ID for purposes of bidding on display advertising inventory.

80.7.

[REDACTED]

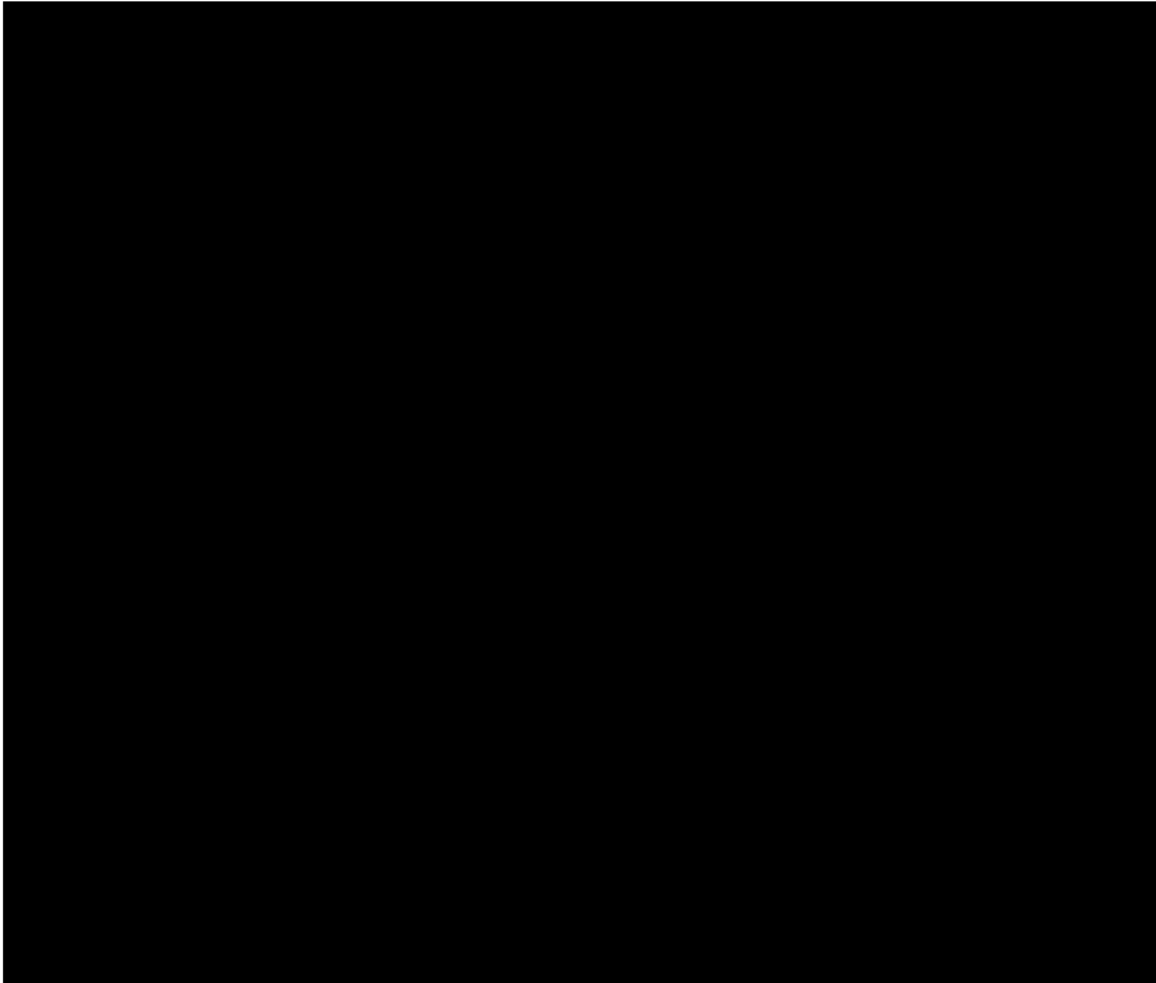
83. Please specify whether there are any restrictions imposed by any Google product or service, or any technical limitations, affecting the number of recipients of a given bid request that are eligible to perform a cookie match.

83.1.

[REDACTED]

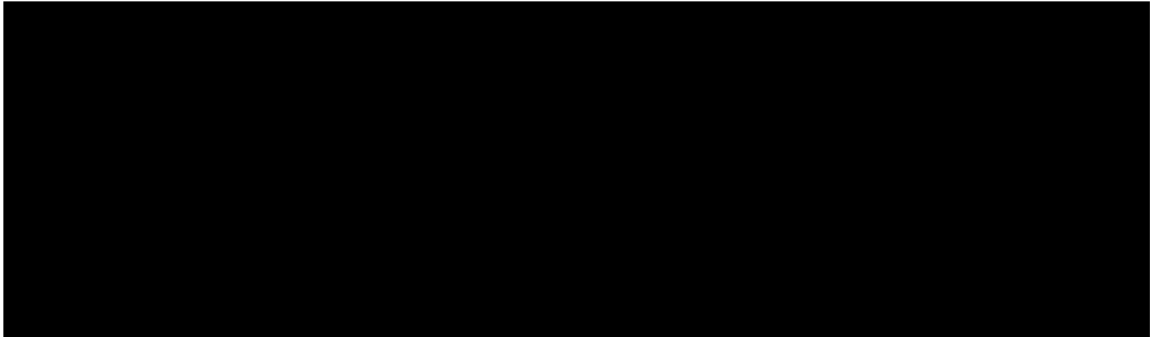
²⁰ For example, a court order, to combat fraud or abuse, or for panelists that are compensated and have consented to additional terms with Google or panel companies (See "Google Panel Privacy Policy", available at: <https://support.google.com/screenwise-meter/answer/9744317>.)

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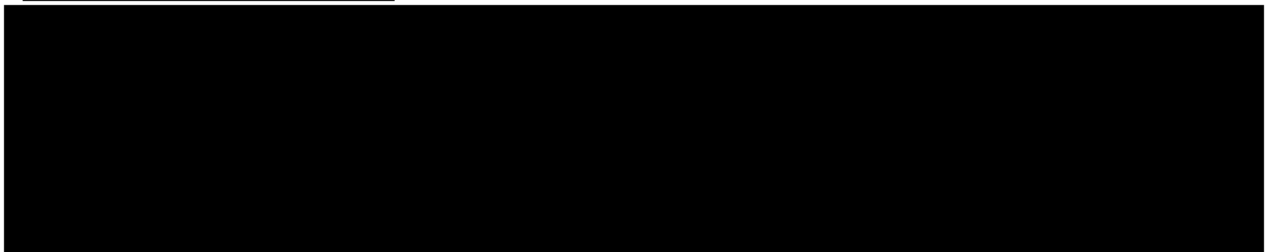


84. Please identify and describe any technical or other factors that determine or contribute to the success or failure of the cookie matching process.

84.1.



84.2.



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84.3.

84.4.

²⁴ See AdExchanger, "AppNexus CEO Brian O'Kelley On Waging A Price War", (9 November 2017), available at: <https://www.adexchanger.com/platforms/appnexus-ceo-brian-okelley-waging-price-war/>.

²⁵ See "Cookie Matching", Google, available at: <https://developers.google.com/authorized-buyers/rtb/cookie-guide#cookie-match-assist>.

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(b) Factors relating to the partner and/or Google, including:

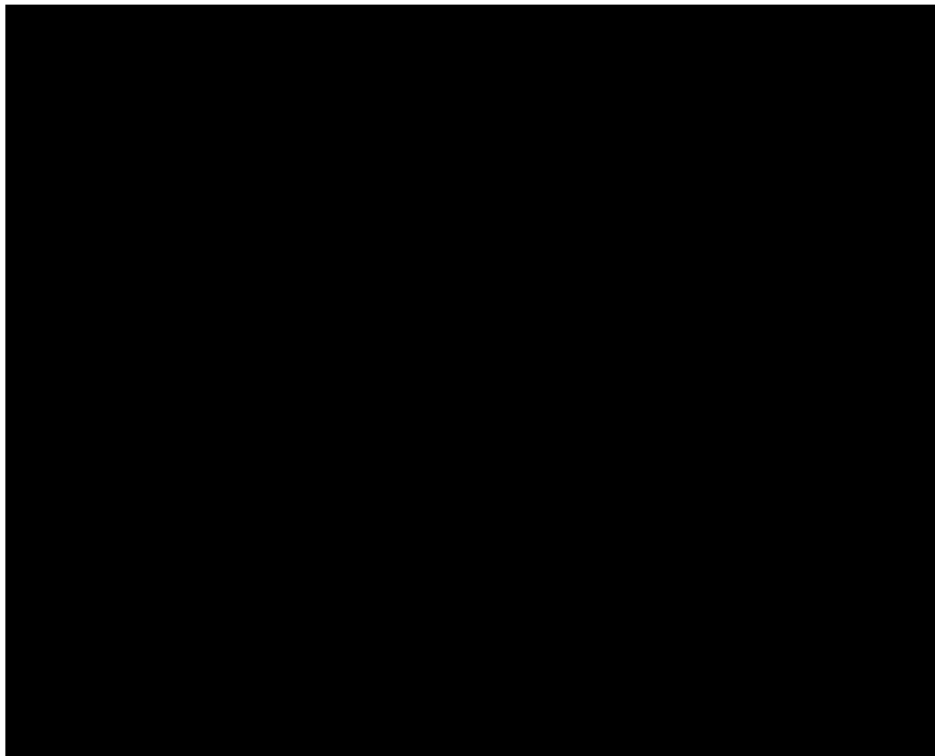
(i)

(ii)

(iii)

(iv)

(v)



89. Paragraph 12.25 of Google's reply to RFI 7 of 12 July 2021 stated, in relation to the Partner ID in DV360 and CM360 Data Transfer that the Partner ID makes it easier for the entity to link its own cookie-based user ID to the user ID provided in the DV360 and CM360 Data transfer "file".

a. Please confirm whether there is indeed a single Data Transfer file type that works across two Google products (DV360, including legacy DBM; and CM360).

89.1. Customers are able to access a unified Data Transfer file that links data from a customer's DV360 and CM360 accounts.

b. If so, when exactly did this start, and why was the decision to use a single Data Transfer file type in this way taken?

89.2. The unified Data Transfer file for DV360 and CM360 has been available since 2015. Customers who do not want a unified Data Transfer file can still maintain unlinked DV360 and CM360 accounts, and get single-product Data Transfer files from each.

89.3. Google introduced the unified Data Transfer file for DV360 and CM360 following customer demand for the feature.

91. Paragraph 14.10 of Google's reply to RFI 7 of 12 July 2021 stated "These Data

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Transfer Files to buyers do not contain user identifiers (encrypted or otherwise) globally”

- a. Has it always been the case that Data Transfer files for buyers do not contain user identifiers (encrypted or otherwise)?
- b. If not, when exactly did this start, and why was the decision to remove user identifiers (encrypted or otherwise) from Data Transfer files for buyers in this way taken?

94.1. No, it has not always been the case that Data Transfer files for buyers do not contain user identifiers. Further details on when this started and why the decision was made will be given in the response to Question 37 of RFI 10.

95. Please confirm the exact date on which the “GAIA Council” was created and list the name of all its members since creation.

95.1. Based on the knowledge of current Google employees, the GAIA Council was created in or around June 2015.

95.2. The GAIA Council was disbanded in April 2020.

95.3. Google provides below a list of regular attendees to the GAIA Council that Google has been able to identify through reference to previous attendance notes. Google notes that attendance by each individual listed below may have varied over time, and that GAIA Council meetings were also attended by other Google employees on an ad hoc basis to discuss various products or projects.

- (a)
- (b)
- (c)
- (d)
- (e)
- (f)
- (g)
- (h)
- (i)
- (j)
- (k)
- (l)
- (m)

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(n)
(o)
(p)
(q)
(r)
(s)
(t)
(u)

96. Please exhaustively list all meetings of the "GAIA Council, specifying, for each, the date and the subject matter discussed.

96.1. To the extent possible, Google provides a list of all meetings of the GAIA Council, including the date and subject matter discussed at **Annex 95.1**. Google provides the date of each meeting where possible, but no date has been recorded for a number of meetings. In these cases, Google has placed the meetings in chronological order to the best of its knowledge.

97. Please provide the following documents – mentioned in e.g. document GOOG-DOJ-13221922 ("Full Circle Background", 26 November 2016)

b. An example of a [REDACTED] - which is stated to match [REDACTED]

97.1.

97.2.

97.3.

c. An example of of an [REDACTED] (if different from previous)

97.4.

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d. An example of an [REDACTED] (if different from previous)

97.5.

e. An example of a [REDACTED] - which is stated to be [REDACTED]

97.6.

97.7.

98. Please provide the following documents - mentioned in e.g. document GOOG-DOJ-03903109 ([REDACTED] updated 1 June 2016).

c. An example of a [REDACTED]

98.1.

* * *

²⁶ These are internal Google terms.